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The Determinants of Combined Assurance Adoption: A Global Survey

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Summary

Corporate governance failures and new regulation has emphasized the importance of risk management oversight. As a result, combined assurance has recently emerged as a paradigm to enhance risk management oversight. Combined assurance ensures that assurance activities are coordinated in such a way that it provides holistic assurance to the board about the effectiveness of risk management, which ultimately helps board exercise its risk management oversight role. This exploratory study presents the results of a global survey of internal auditors' perceptions about the determinants of combined assurance adoption. Based on a unique dataset of 186 usable responses, we find that internal auditors perceive that (i) risk management oversight maturity, (ii) the existence of a board subcommittee responsible for overseeing risk management processes, (iii) the number of different assurance providers, and (iv) other organizational characteristics are significantly associated with combined assurance adoption. We discuss the implications of our findings for research and practice.

Keywords : Assurance Activities, Enterprise Risk Management, Internal Audit, Risk Management Oversight.

JEL Classification: M42

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INTRODUCTION

A sound governance, risk management, and internal control environment starts by stretching the strategic planning exercise to consider alternative outcomes. That is, while the strategy is being developed, management and the board should consider a number of questions: What are the major risks this plan exposes the company to? How much risk exposure are we willing to accept? What are the mitigating controls that need to be in place to effectively limit these risks? How will we know if these controls are working effectively? (Bies, 2004).

The above quote from Ms Susan Schmidt Bies, Member of the Board of Governors of the US Federal Reserve, in a speech given at the Risk Management Association and Consumer Bankers Association Retail Risk Conference, in Chicago during Summer 2004, provides tenet for understanding the importance of risk management to effectively execute business strategies. Risk oversight has particularly gained prominence in recent years. One reason was that the 2008-09 financial crisis has been somewhat attributed with poor governance caused by failures in board's risk management oversight role (see Beasley & al., 2014; Beasley & Frigo, 2007; Brown & al., 2009; Committee of Sponsoring Organizations of the Treadway Commission (COSO) (2009); Conyon & al., 2011; Magnan & Markarian, 2011; Mikes, 2011; Pirson & Turnbull, 2011).

While regulators and policy makers are trying to focus on mechanisms to improve risk management oversight, combined assurance, defined as "integrating and aligning assurance processes in a company to maximise risk and governance oversight and control efficiencies, and optimise overall assurance to the audit and risk committee, considering the company's risk appetite" (Institute of Directors (IoD), 2009, p.50), has emerged as a new paradigm to receive holistic assurance about the effectiveness of risk management (see e.g., Decaux & Sarens, 2015; Institute of Internal Auditors (IIA), 2012a; IIA UK & Ireland, 2010; IoD, 2009; Landsittel & Rittenberg, 2010; Sarens & al., 2012).

Despite the recommendations and value of applying a coordinated approach to all assurance activities (IIA, 2012a; 2010; 2009b; IIA UK & Ireland, 2010; Sarens et al., 2012), only a few organizations have implemented combined assurance (IIA UK & Ireland, 2010), and there is nowadays not much academic literature on this topic. Particularly, research is necessary to understand why some organizations are adopting combined assurance, whereas others are not.

The purpose of this study is to fill this gap. Using a survey targeting chief audit executives and other internal auditors, we explore the determinants of combined assurance adoption. Based on 186 usable survey responses, our results suggest that (i) risk management oversight maturity, (ii) the existence of a board subcommittee responsible for overseeing risk management processes, (iii) the number of different assurance functions, and (iv) other organizational characteristics are associated with the decision to implement combined assurance to monitor the effectiveness of risk management processes.

This study mainly contributes to the existing literature on risk management oversight (see, e.g., Beasley & al., 2014; 2005; Landstittel & Rittenberg, 2010). Particularly, it provides important insights into combined assurance that may well be seen as a process to monitor the continued effectiveness of the risk management process (Landsittel & Rittenberg, 2010). This study also contributes to the emerging literature on combined assurance (see, e.g., Decaux & Sarens, 2015; Sarens & al., 2012) by being the first study to examine the determinants of combined assurance implementation using a unique dataset. This study has also implications

for practitioners and regulators as it develops an understanding of the determinants of combined assurance implementation to enhance organizational governance. In a context in which policymakers and regulators are trying to improve risk management oversight, this study provides initial evidence about the antecedents of combined assurance implementation that may be of some interest to them.

The article proceeds as follows. The second section provides background to the study. The third section develops hypotheses. The fourth section describes the research method. Results are reported in the fifth section. The final section concludes, identifies limitations, and offers opportunities for future research.

BACKGROUND TO THE STUDY

Since the release of Enterprise Risk Management (ERM) – Integrated Framework (COSO, 2004), more and more organizations have embraced ERM as a way to better link risk management with business strategy. The framework consists in eight risk management processes: (i) internal environment, (ii) objective setting, (iii) event identification, (iv) risk assessment, (v) risk response, (vi) control activities, (vii) information and communication, and (viii) monitoring the effectiveness of the whole framework (COSO, 2004). In the same time, a large community of researchers has followed the initiative with a great extent of related publications on the topic (see, e.g., Arena & al., 2010; Beasley & al., 2005; Hayne & Free, 2014; Mikes, 2011; Power, 2009). According to Miller & al. (2008), the omnipresence of ERM may be explained by the proliferation of tools and technologies such as chief risk officers, risk maps and/or assurance framework.

There have been a multitude of debates in ERM along the years. Some academics have explored the factors associated with ERM implementation (see e.g., Beasley & al., 2005; Kleffner & al., 2003; Liebenberg & Hoyt, 2003). Others have studied the value and performance of ERM (see e.g., Gordon & al., 2009; Nocco & Stulz, 2006; Smithson & Simkins, 2005; Hoyt & Liebenberg, 2011). Nowadays, literature, practice and regulation suggest that the debate is around risk management oversight. As discussed above, monitoring the effectiveness of ERM is the last step of the eight "ideal typical ERM processes" (Hayne & Free, 2014, p. 311). Risk oversight requires the board to assess how effectively the entire risk management framework is present and functions in responding to significant risks (Beasley & al., 2013; Beasley & Frigo, 2007; Beasley & al., 2006; COSO, 2009; 2004). Proponents of enhanced risk management oversight argue that it helps boards to better exercise their risk management duties, while at the same time, reinforces the strategic role of the board (Beasley & al., 2013; Reding & al., 2009).

Recent corporate failures and changes in corporate governance have increased stakeholder expectations with respect to risk management and they have asked boards to demonstrate better accountability when it comes to risk management oversight. According to Pirson & Turnbull (2011) board's risk management oversight role failed during the last financial crisis because directors either lacked relevant risk-related information or were unable to process the information at their disposal. Accordingly, several governance initiatives were released with guidance and recommendations to improve risk management oversight. In Europe, guidance on the 8th Directive, article 41, was released by the European Confederation of Institutes of Internal Auditing (ECIIA) and the Federation of European Risk Management Associations (FERMA) to encourage boards and audit committees to monitor the effectiveness of risk management and internal control systems (ECIIA & FERMA, 2010). Similar approaches were adopted in other countries, such as the USA (New York Stock Exchange Commission, 2010) or the UK (Financial Reporting Council, 2012). South Africa

went a step further. The release of updated South African code of corporate governance – King III – has particularly insisted on the responsibilities for boards to comment on the adequacy of their internal control system (Principle 2.13) and to receive assurance about the effectiveness of the entire risk management process (Principle 4.9) (IoD, 2009).

Nowadays, effective governance suggests that boards receive assurance about the effectiveness of risk management (IIA, 2012a; IIA, 2009a; IIA UK & Ireland, 2010; Sarens & Christopher, 2010; Spira & Page, 2003). The exercise of risk management oversight role asks that the board collects assurance from different assurance providers – management, internal and/or external audit, compliance, corporate social responsibility, to name but a few examples – in order to help board exercises its risk management oversight responsibilities (Decaux & Sarens, 2015; IIA, 2012a; IIA, 2009b; Reding & al., 2009; Sarens & al., 2012). In a nutshell, these assurance providers are internal and external functions "who tell managers what is on track and what is not within the company" (Deloitte, 2011, p. 1). Therefore, risk management and assurance activities are mutually dependent of one another (Daugherty & Anderson, 2012; Reding & al., 2009) since risk management provides the proper infrastructure to support the assurance process (IIA, 2012a). Due to the multitude of risks an organization is facing, and therefore the multitude of assurance required, the idea of coordinating assurance activities between the whole set of assurance providers emerged within King III (IoD, 2009). Combined assurance aims to optimize assurance activities delivered by a multitude of assurance provides on the risks that organizations are facing (IoD, 2009). Even if there have been elements[1] of combined assurance before King III, the South African code was the first to formalize that coordination by suggesting it will improve board's risk management oversight role. Very quickly after King III, the IIA embraced the initiative and started to release several guidance and practice advisories to help organizations coordinating their assurance activities (IIA, 2012a; IIA, 2010; IIA, 2009b). Thus, combined assurance is described as a paradigm that helps boards monitor the effectiveness of ERM (Decaux & Sarens, 2015; IIA, 2012a; Sarens et al., 2012). In the same vein as ERM coordinates risk management activities between previously siloed risk functions, combined assurance does the same with assurance activities[2] with the objective of providing holistic assurance to the board.

However, combined assurance literature has not been so extensive. Yet, it is still emerging. A first survey from the IIA UK & Ireland (2010) revealed only limited cases in which assurance activities were coordinated. That survey also reported an initial list of different assurance providers that organizations are frequently using, benefits of coordinating assurance, and reasons explaining why it could be difficult to coordinate assurance. Furthermore, Sarens & al. (2012) and Decaux & Sarens (2015) have used case studies to enter the black box of combined assurance. Their findings have clarified some of prior results. One important finding is that combined assurance should improve ultimately board's oversight role by improving assurance reporting to the board and by reducing assurance duplication and assurance gaps (Sarens & al., 2012). Furthermore, they provide first insights about how to implement combined assurance (Decaux & Sarens, 2015). Nevertheless, research has been silent so far about the reasons why some organizations are adopting combined assurance, and others are not. To investigate this area, this study explores several elements that may be associated with combined assurance adoption.

[1] See for example the extant literature on coordinating the roles of internal audit and external audit.

[2] According to many, the three lines of defense model can serve as the starting point to identify and coordinate all assurance providers an organization is facing. See Anderson & Daugherty (2012), ECIIA and FERMA (2010), IIA (2013), IIA UK and Ireland (2010) to name but a few, for additional information.

HYPOTHESES DEVELOPMENT

Presence of a committee responsible for risk management oversight. Board subcommittees exist to support directors perform their roles more effectively. When it comes to risk management oversight, the board traditionally delegates this task either to the audit committee or to a risk committee (Beasley & al., 2014; Subramaniam & al., 2009). Kleffner & al. (2003) found that tone at the top from boards was an important factor underlying adoption of ERM for Canadian companies. Assigning to one of its subcommittees responsibility for overseeing risk management processes captures some of the board engagement in risk oversight (Beasley & al., 2013). However, in a survey on the state of risk management oversight, Beasley & al. (2014) pointed out that the assignment of risk oversight to a committee seems to be the exception rather than the rule with 41.4% of sampled organizations having one. Furthermore, Hermanson & al. (2012) found some evidence that the perceived strength of controls is higher when the chief audit executive reports primarily to the audit committee. According to these authors, it gives a signal for enhanced audit committee's oversight of controls, and therefore increased board oversight role. Given the important role of board subcommittees in risk management oversight, we predict that in cases for which the board assigns to one of its subcommittees the responsibility for overseeing risk management processes, there will be greater chance that organizations adopt combined assurance.

H_1: The presence of a committee responsible for risk management oversight is positively associated with combined assurance adoption.

ERM oversight maturity. The IIA (2012a; 2009a) states that monitoring the effectiveness of ERM should be the role of the internal audit function and other assurance providers. Since 2009, a team of researchers from the ERM Initiative[3] group collects each year data on the state of risk management oversight. These researchers have showed a growing interest in risk management oversight because of the higher percentage of companies having had complete ERM in place each year. In their last report, 24.6% of organizations had a complete ERM in place, in 2013, in comparison with only 8.8% in 2009 (Beasley & al., 2014). Also, the survey reveals that pressure for improved ERM oversight comes from (i) board expectations, (ii) external pressure from investors and/or rating agencies, (iii) regulation, and (iv) new governance requirements (Beasley & al., 2014). According to Beasley & al. (2014), even if the percentage of ERM implementation has increased over time, "the level of sophistication of underlying risk management processes still remains fairly immature for most responding" with 17.8%, 27.4%, 34.7%, 16.9%, and 3.2% having respectively very immature, developing, evolving, mature and robust risk management processes (Beasley & al., 2014, p. 17). Though, Sarens & al. (2012) discussed that combined assurance could well be seen as the most efficient and effective way to monitor the effectiveness of risk management. In a recent study about the critical steps for implementing combined assurance, Decaux & Sarens (2015) show that combined assurance adoption highly depends on the maturity of ERM. According to them, "a well-developed risk management process is the antecedent to combined assurance; otherwise what are assurance providers going to assure?". Taken these findings together, we can assume that there is more chance that organizations implement combined assurance when the level of ERM oversight maturity reaches a higher level.

H_2: ERM oversight maturity is positively associated with combined assurance adoption.

[3] See www.erm.ncsu.edu for more details.

Number of assurance providers. Traditionally, assurance services are provided by a multitude of different assurance providers (Sarens & al., 2012). In order to avoid problems such as assurance gaps, assurance duplication, and inefficient reporting due to uncoordinated activities, organizations may request their various assurance providers to coordinate their activities within a combined assurance framework (IIA, 2012a; IIA, 2012b; IoD, 2009; Sarens & al., 2012). Undoubtedly, organizations with a greater number of different assurance providers will mostly benefit from coordinating assurance services in order to achieve effective and efficient assurance coverage in comparison with those with fewer assurance providers. Thus, we hypothesize that:

H_3: The number of different assurance providers is positively associated with combined assurance adoption.

Risk-Based Internal Audit. Today, one important issue surrounding ERM is the role of the internal audit function in risk management (Vinnari & Skærbæk, 2014). COSO (2004) stated that the role of the internal audit function is "to assist management and the board of directors or audit committee by examining, evaluating, reporting on and recommending improvements to the adequacy and effectiveness of the entity's enterprise risk management" (p.88). The redefinition of internal control systems as part of risk management activities (COSO, 2004) has somewhat contributed to the shift of internal audit activities being control-driven to being risk-driven (Spira & Page, 2003). Internal audit's core activities with respect to ERM are (1) to provide assurance to the board that the risk management framework is operating effectively and (2) to provide assurance that key risks are being managed appropriately through an effective internal control system (IIA, 2009a). To do so, more and more internal auditors adopt a risk-based internal auditing approach when preparing their audit plan since it ensures that internal audit resources are focuses on what is of the most importance to the board (Castanheira & al., 2009). However, no internal auditor is able to provide holistic assurance to the board on its own, he/she will use other assurance providers in order to provide a global assessment about the effectiveness of risk management (IIA, 2010; Sarens & al., 2012). That said, we assume that those internal auditors who follow a risk-based internal audit approach will have more chance to coordinate their assurance activities with that of other assurance providers, thus implementing combined assurance.

H_4: Risk-based internal audit is positively associated with combined assurance adoption.

Compliance with IIA Standards. The IIA is the global setter for internal audit standards. Recently, the IIA has embraced the idea of coordinating assurance activities just after the release of King III. According to different standards and practice advisories, it is suggested that the internal audit function not only takes responsibility for monitoring ERM, but also coordinates with other assurance providers. IIA Standard 2050 on coordination states that the chief audit executive "should share information and coordinate activities with other internal and external providers of assurance and consulting services to ensure proper coverage and minimize duplication of efforts" (IIA, 2012b). Same as COSO having played an important role in the institutionalization of ERM (Hayne & Free, 2014), the IIA advocates the concept of combined assurance so that we explore if organizations in which the internal audit function complies with IIA standards have more chance to coordinate their assurance activities with other assurance functions through a combined assurance approach. Thus, we hypothesize:

H_5: Compliance with IIA Standards is positively associated with combined assurance adoption.

Board independence. The board is an important monitoring mechanism (Reding & al., 2009). Moreover, the presence of non-executives to the board improves monitoring since non-executives better represent principals' interests from agents' opportunism (Beasley & al., 2009; Pincus & al., 1989). According to agency theory, independent boards are more objective to assess management actions and to take greater decisions because of impartiality in comparison with boards in which the percentage of non-executives is lower (Jensen & Meckling, 1976). Furthermore, the presence of non-executives is more likely to increase the quality of monitoring since they are more likely to suggest other internal and/or external monitoring mechanism to complement their own monitoring duties (Subramaniam & al., 2009). For example, Beasley & al. (2005) found that a more independent board is positively associated with ERM deployment. Therefore, we argue that a board with a larger proportion of non-executives is likely to more actively engage in combined assurance adoption as a way to support them in their risk management oversight responsibilities.

H_6: Board independence is positively associated with combined assurance adoption.

CEO duality. CEO duality corresponds to a situation in which the CEO and the chairman of the board refer to the same individual. An independent chairman is often seen as providing better monitoring because he/she undertakes an independent check on the CEO. As such, an independent chairman is more likely to seek high quality monitoring. Jensen (1993) pointed out that CEO/chairman dual role may lead to failures in internal control systems. In addition, Subramaniam & al. (2009) found that the existence of an independent chairman was positively associated with the existence of a risk management committee. In this study, we predict that the independent chairman is more likely to promote the adoption of combined assurance as it would enable better risk management oversight.

H_7: CEO duality is negatively associated with combined assurance adoption.

Big-4 audit firm. External auditing has long been recognized as a key monitoring mechanism that principals use to reduce agency problems (Jensen & Meckling, 1976; Watts & Zimmerman, 1983). External auditors have recently given increasing attention to risk management oversight as for the coordination of assurance activities. With post-audit recommendations, external audit firms are generally able to propose suggestions to further improve internal control and risk management systems to their clients (Subramaniam & al., 2009). Moreover, Cohen & al. (2004) found that Big-4 audit firms were more likely to encourage higher quality internal monitoring mechanisms in comparison with non-Big-4 firms. In the same vein, Beasley & al. (2005) found evidence that enterprises audited by a Big-4 had greater level of ERM implementation. Taken together, these results suggest that organizations audited by a Big-4 firm reach higher quality monitoring. In addition, the number of publications from Big-4 firms on the topic of combined assurance reveals the increasing interest in this area (see e.g., Deloitte, 2011; EY, 2010; KPMG, 2007; PwC, 2012). Based on the above discussion, we expect that organizations audited by a Big-4 firm will have greater chance to implement combined assurance.

H_8: Big-4 firm is positively associated with combined assurance adoption.

Size. Many studies attest that larger organizations use more effective monitoring techniques, such as ERM, in comparison with smaller organizations (Beasley & al., 2005; Colquitt & al., 1999; Hoyt & Liebenberg, 2011; Liebenberg & Hoyt, 2003; Pagach & Warr, 2011). In addition, Carcello & al. (2005) found that larger firms are more likely to have more extensive internal audit budget as one internal monitoring technique. Finally, the sample case studies used by Decaux & Sarens (2015) suggests that combined assurance has a higher

propensity to be used in larger organizations. Taken together, these results may also allow for larger organizations having a greater propensity to implement combined assurance as a way to provide holistic assurance about the effectiveness of ERM.

H_9: Size is positively associated with combined assurance adoption.

Organization complexity. According to Carcello & al. (2005) complexity increases with the number of business segments which increases the demand for monitoring mechanisms. Therefore, we assume that organizations with greater complexity will implement combined assurance as a way to improve risk management oversight.

H_{10}: Organization complexity is positively associated with combined assurance adoption.

Listed organization. Listed organizations are usually more likely to have mature risk management practices because of regulation and market pressure. For example, Kleffner & al. (2003) argued that compliance with Toronto Stock Exchange guidelines had been one of the determinants which led Canadian companies to implement ERM. Listed organizations are usually more aware about best practices in their industries. As discussed above, many codes of corporate governance have put pressure on boards to apply more effective risk management oversight practices, such as combined assurance in South Africa. In fact, King III recommends organizations to apply or explain why not, they follow a combined assurance approach to their assurance activities. Thus we have,

H_{11}: Listed organization is positively associated with combined assurance adoption.

Bank. Some industry characteristics affect the level of risk and the need for monitoring mechanisms accordingly (Beasley & al., 1999). Banks are traditionally at the forefront when it comes to the implementation of risk management oversight techniques because of regulatory scrutiny, due notably to Basel requirements. That is why Beasley & al. (2005) found that firms in the banking industry are more advanced in their ERM implementation. Moreover, Carcello & al. (2005) identified a positive relationship between the existence of internal audit and companies operating in the finance industry. Similarly, finance organizations are more likely to implement risk-based approaches when scheduling their audits as an internal monitoring tool (Castanheira & al., 2009). In addition, banks are particularly asked to use the three lines of defense to improve the effectiveness of risk management overall (Booz&co, 2008; Chambers, 2014; Sarens & al., 2012). One interviewee in cases reported in Sarens & al. (2012) suggests that combined assurance adoption should be easier for banks. Since the three lines of defense model is often seen as providing the basis for coordinating assurance activities between assurance providers (IIA UK and Ireland, 2010), we can hypothesize that:

H_{12}: Bank is positively associated with combined assurance adoption.

Leverage. The literature suggests that debt levels are positively related to monitoring mechanisms, such as external auditing (Carey & al., 2000) or internal auditing (Carcello & al., 2005). Moreover, Liebenberg & Hoyt (2003) found that firms with greater financial leverage are more likely to appoint a chief risk officer as a first initiative to adopt ERM. Hoyt & Liebenberg (2011) confirmed that leverage is a good predictor of ERM engagement. That is so because lenders ask for better monitoring mechanisms when leverage increases. Taken together, these results suggest that leverage is positively associated with higher monitoring mechanisms. These results may also allow for combined assurance. We can reasonably

assume that highly leveraged organization will affect the decision to implement combined assurance.

H_{13}: Leverage is positively associated with combined assurance adoption.

METHOD

We electronically surveyed[4] internal auditors during April and June 2014 to obtain data on combined assurance because such specific information is not publicly available. We pre-tested the online survey with academics and the IIA Research Foundation and we made revisions based on feedback received. The survey was sent to the IIA Research Foundation who in turn sent an invitation to local institutes in order to participate to the study. The survey was then administered to local IIA's affiliates and to chief audit executives or other internal auditors. Research has shown that internal auditors are particularly knowledgeable when it comes to risk management (Arena & al., 2010; Hayne & Free, 2014; Spira & Page, 2003; Vinnari & Skærbæk, 2014) and combined assurance issues (Decaux & Sarens, 2015; Sarens & al., 2012).

Sample

In total, we received 264 partially or fully completed survey responses. Some respondents provided an answer to selected questions while they omitted others. Also, some questions were conditional to the answer to other questions. As a result, due to our research question, seventy-eight observations had to be deleted due to incomplete/not applicable data for one or more variables in the model. The final sample[5] is 186 chief audit executives or other internal auditors which is similar to other studies (e.g., Abbott & al., 2010; Beasley & al., 2005; Raghunandan & al., 2001). Respondent profile is the following: 45.7% are chief audit executives, 21% are part of internal audit management, 16.7% are internal audit senior or supervisor, 9.6% are part of internal audit staff, finally 7% comes from other positions, such as risk manager or audit committee chairman to name but a few. The organizations represented by these respondents come from: Europe (40.3%), Asia (28.5%), Africa (20.4%), Australia (8.6%) and America[6] (2.2%).

Variables

CA ADOPTION is a dummy variable which represents whether or not the organization has implemented combined assurance. OVERSIGHT COMMITTEE is a dummy variable which takes a value of 1 if the board assigns the responsibility for overseeing risk management to one of its committees, 0 otherwise. OVERSIGHT MATURITY is a Likert-scale which takes a value ranging from 1 (very immature) to 5 (robust) as in Beasley & al. (2014; 2013). NUMBER AP is a computed variable. It corresponds to the sum of all different assurance providers that apply in the organization. Respondents had the opportunity to select all assurance providers in a predefined list of eighteen frequent assurance providers based on IIA UK & Ireland (2010) and Sarens & al. (2012). RBIA takes a value of 1 if the internal audit function follows a risk based internal auditing approach to its plan, 0 otherwise. IIA COMPLIANCE is also a dummy variable: 1 if the internal auditor complies with IIA guidelines, 0 otherwise. BOD INDEPENDENCE is the percentage of board members who are

[4] The survey instrument is available upon request. Please contact the corresponding author.
[5] We cannot compute a response rate because we do not know how many local institutes (and, therefore, internal auditors) were contacted by the IIA Research Foundation.
[6] The low response rate for America is explained by the fact that the IIA Research Foundation was busy with the Common Body of Knowledge (CBOK) at the same time, and they did not want to jeopardize with that survey.

independent given the full board size (Beasley & al., 2005; Subramaniam & al., 2009). DUALITY is a dummy variable with value ranging from 1 if the CEO is also the chairman of the board, and 0 otherwise. BIG-4 is a dummy variable for which the value depends whether the organization uses a Big-4 audit firm to review financial statements, or not. We use the natural log of total assets in millions of US dollars as a proxy for firm SIZE. COMPLEXITY is the number of the different business units an organization has (Carcello & al., 2005; Subramaniam & al., 2009). LISTED and BANK are both variables which take value of 1 if the organization is listed on a stock exchange, and if the organization is from the banking industry respectively, 0 otherwise. Finally, LEVERAGE is the percentage of debts to total assets.

Logistic model

We use the following logistic model to address our hypotheses with a nominal dependent variable:

CA ADOPTION = f [OVERSIGHT COMMITTEE; OVERSIGHT MATURITY; NUMBER AP; RBIA; IIA COMPLIANCE; BOD INDEPENDENCE; DUALITY; BIG-4; SIZE; COMPLEXITY; LISTED; BANK; LEVERAGE].

RESULTS

Descriptive statistics

Of the sample of 186 observations, 45.7 per cent have somewhat adopted combined assurance. We asked the respondents about their organization's risk management oversight characteristics, such as the stage of maturity of the risk management oversight and the presence of a board subcommittee with responsibility for overseeing risk management. First, almost one-third (30.6 per cent) admit they have "mature" or "robust" risk management oversight. Second, in 67.4 per cent of cases, the board has given risk management oversight responsibility to a board subcommittee. In addition, Table I presents other descriptive statistics on the variables used in the regression model.

[INSERT TABLE I ABOUT HERE]

Table II provides the Pearson's correlations between the variables used in the regression model. An examination of the correlation matrix indicates that variables are not too highly correlated suggesting that multicollinearity is not a problem. We find that CA ADOPTION is strongly correlated with OVERSIGHT MATURITY, OVERSIGHT COMMITTEE, NUMBER AP, IIA COMPLIANCE, BOD INDEPENDENCE, BIG-4, and LISTED.

[INSERT TABLE II ABOUT HERE]

Logistic regression

A logistic regression analysis was conducted to predict combined assurance adoption using different organizational characteristics as predictors. A test of the full model against a constant only model was statistically significant, indicating that the predictors as a set reliably distinguished between adoption of combined assurance, and not adoption at all (Omnibus tests of model coefficients, Model Chi-Square = 57.819, $p < 0.000$ with df = 13). Thus, the indication is that predictors have a significant effect and create essentially a different model, than one with the constant only (Agresti, 2007). Alternatively, the Hosmer-Lemeshow

goodness-of-fit statistic is greater than 0.05, as we want for well-fitting model. If the statistic is > 0.05, we fail to reject the null hypothesis that there is no difference between observed and model-predicted values, signifying that the model's estimates fit the data at an acceptable level (Hosmer & Lemeshow, 2000). Our Hosmer-Lemeshow statistic has a significance of 0.345 which means that it is not significant and therefore our model is quite a good fit.

Table III provides the results of the combined assurance adoption logistic regression model. Nagelkerke's R^2 of 0.552 indicates that the predictors make a contribution to the variance in the decision to implement combined assurance. According to the Wald statistics, the presence of a committee responsible for overseeing risk management processes, ERM maturity oversight, the number of assurance providers, board's independence, and whether the organization financial statements are reviewed by a Big-4 audit firm significantly predict combined assurance adoption ($z = 5.246$, $p < 0.05$; $z = 4.455$, $p < 0.05$; $z = 5.327$, $p < 0.05$; $z = 4.326$, $p < 0.01$; $z = 1.498$, $p < 0.05$, respectively). Therefore, H1, H2, H3, H6 and H8 are supported. In addition, our results suggest that RBIA and DUALITY are marginally associated with combined assurance adoption ($z = 3.547$, $p < 0.10$; $z = 3.186$, $p < 0.10$, respectively). Therefore, we found some evidence that H7 is supported, that is when roles between CEO and chairman are separated, there is higher chance that the organization implements combined assurance. However, results for H4 suggest an opposite direction of what we expected. We found marginal evidence that when internal auditors follow a risk-based internal audit approach, organizations tend to implement combined assurance on a lesser extent. Finally, the remainder of the set of hypotheses are not supported. The Exp(B) column in Table III presents the extent to which raising the corresponding measure by one unit influences the odds ratio.

Sensitivity test

We controlled whether our results are sensitive to a country dimension. Using dummy variables for each region (Africa, America, Asia, Australia, and Europe), none of these variables is significant. In addition, the other results are similar to those presented in Table III.

DISCUSSION AND CONCLUSIONS

Corporate governance failures, new regulation and recommendations have emphasized the importance of risk management oversight. On the other hand, interaction between corporate governance players has long been an important research area. According to Beasley & al. (2009), frequent and meaningful interactions between the audit committee, the internal auditor, the external auditor, management, and the board are critical to effective audit committee oversight. The same is true for coordination between different assurance providers.

The present study provides some illumination towards the determinants associated with combined assurance adoption, as a way to enhance board's risk management oversight (Landsittel & Rittenberg, 2010). Until now, there has been no empirical evidence about the determinants associated with combined assurance. This study fills this gap by providing preliminary evidence. The results suggest that some characteristics which demonstrate commitment for board engagement in risk management oversight, such as when the board delegates to a subcommittee responsibility for overseeing risk management, and the maturity of ERM oversight, explain the decision to adopt combined assurance. Taken together these results corroborate findings from Decaux & Sarens (2015) and Sarens & al. (2012) who suggested that a well-developed risk management framework drives combined assurance adoption. The number of different assurance providers that an organization uses is also associated with combined assurance adoption. This signifies that when the board and/or

subcommittees rely on a multitude of different assurance providers, there is higher chance that assurance providers coordinate in order to be more effective and more efficient in dealing with assurance activities. Furthermore, agency theory indicates that some agency-cost related factors, such as board's independence and CEO duality, are important monitoring mechanisms to reduce agency costs. Our results indicate that several board factors are associated with the adoption of combined assurance. Finally, our results suggest that when financial statements are reviewed by a Big-4 audit firm, the client organization has higher chance to implement combined assurance. This result is consistent with Cohen & al. (2004) who suggest that Big-4 companies are good candidates to improve quality monitoring to their client organizations. Surprisingly, we found marginal evidence that where the internal auditor follows a risk-based internal audit approach, there is less chance that the organization implements combined assurance ($p < 0.10$). A possible explanation for this finding is that internal auditors need first to consult with other assurance providers when planning their activities, in order to know what risk is covered and by whom. In other words, it highlights the importance of an assurance mapping exercise (see e.g. Decaux & Sarens, 2015; IIA, 2009b; Sarens & al., 2012).

The findings of this study should be of interest to organizations that do not have combined assurance, academics, and regulators as combined assurance may join the range of monitoring mechanisms that help boards to fulfil their oversight role appropriately. From a practical perspective, the results provide regulators and directors with a clearer picture of organizational characteristics associated with combined assurance adoption. This knowledge may be useful, for example, if other codes of corporate governance, beyond King III, recommend combined assurance adoption. From a research perspective, the results highlight combined assurance as the potential further step for adequate risk management oversight.

There are limitations in our research approach. First, the sample of the study is only 186 organizations. Thus, the generalizability of the results is limited. A second limitation is that data is derived from an online survey as there is no publicly available data on combined assurance. Third, this study provides combined assurance insights from internal auditors' perceptions. Possibly there are others leading the combined assurance effort within their organizations whose views are not captured in the responses we received. A fourth limitation is that the completion of the survey was voluntary. Therefore, there is some potential for bias if those choosing to respond differ significantly from those who did not respond. Our study's results may be limited to the extent that such bias exists. Finally, there may be important determinants of combined assurance that are not reflected in the study.

We believe this study opens the door for future research in the area of combined assurance. Future research could deeply study combined assurance adoption in a South African context where the chief audit executive is required to provide an independent assessment of the effectiveness of internal controls and risk management, and to rely accordingly on a combined assurance framework. This study only considers organizational characteristics to explain the decision to implement combined assurance, or not. We encourage researchers to also examine behavioural characteristics of combined assurance.

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Table I: Descriptive Statistics for Variables in Model (n=186)

Variable	*Yes = 1*	*%*	*No = 0*	*%*
CA ADOPTION	85	45.7	101	54.3
OVERSIGHT COMMITTEE	124	67.4	60	32.6
RBIA	162	87.1	24	12.9
IIA COMPLIANCE	111	59.7	75	40.3
DUALITY	44	23.7	142	76.3
BIG-4	122	65.6	64	34.4
LISTED	89	47.8	97	52.2
BANK	50	26.9	136	73.1
OVERSIGHT MATURITY:	*n*	*%*		
Very immature	10	5.4		
Developing	56	30.1		
Evolving	63	33.9		
Mature	48	25.8		
Robust	9	4.8		
TOTAL	186	100		
	Mean	*SD*	*Min*	*Max*
NUMBER AP	7.67	3.77	1	18
BOD INDEPENDENCE	62.07	28.96	0	100
SIZE	18.55	2.92	10.31	24.46
COMPLEXITY	10.51	11.54	1	70
LEVERAGE	28.96	26.69	0	90

Table II: Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
CA ADOPTION (1)	1													
OVERSIGHT MATURITY (2)	0.347**	1												
OVERSIGHT COMMITTEE (3)	0.296**	0.354**	1											
NUMBER AP (4)	0.360**	0.164*	0.148*	1										
RBIA (5)	0.063	0.159*	0.101	0.200**	1									
IIA COMPLIANCE (6)	0.314**	0.279**	0.147*	0.207**	0.207**	1								
BOD INDEPENDENCE (7)	0.227**	0.133	0.056	0.059	-0.018	0.08	1							
DUALITY (8)	-0.028	-0.098	0.037	-0.257**	-0.050	-0.007	-0.352**	1						
BIG-4 (9)	0.346**	0.145*	0.084	0.306**	0.025	0.166*	0.058	-0.156*	1					
SIZE (10)	0.17	0.316**	-0.014	0.179*	-0.026	0.081	0.200*	-0.235**	0.102	1				
COMPLEXITY (11)	0.107	0.01	0.068	0.16	0.026	0.133	-0.022	-0.03	0.171*	0.141	1			
LISTED (12)	0.223**	0.293**	0.109	0.194**	0.048	0.085	0.173*	-0.103	0.218**	0.437**	-0.019	1		
BANK (13)	0.101	0.181*	0.235**	0.028	0.089	0.004	0.03	-0.081	0.082	0.125	0.115	0.196**	1	
LEVERAGE (14)	0.043	-0.04	0.034	0.03	-0.082	0.02	-0.081	0.059	-0.009	0.193*	0.106	0.024	0.145	1

**. Correlation is significant at the 0.01 level. *. Correlation is significant at the 0.05 level.

Table III: Logistic Regression Results

Variable	Hypothesis	Exp. Sign	Coefficient	Wald Stat (z)	*p*-value	Exp(B)
OVERSIGHT COMMITTEE	H2	+	1.535	5.246	0.022	4.641
OVERSIGHT MATURITY	H1	+	0.760	4.455	0.035	2.138
NUMBER AP	H3	+	0.208	5.327	0.021	1.231
RBIA	H4	+	-1.531	3.547	0.060	0.216
COMPLIANCE IIA	H5	+	0.773	1.723	0.189	2.167
BOD INDEPENDENCE	H6	+	4.326	10.738	0.001	75.619
DUALITY	H7	-	-1.368	3.186	0.074	0.255
BIG-4	H8	+	1.498	5.607	0.018	4.472
SIZE	H9	+	0.02	0.033	0.855	1.021
COMPLEXITY	H10	+	-0.029	1.117	0.291	0.971
LISTED	H11	+	0.336	0.304	0.581	1.399
BANK	H12	+	-0.136	0.041	0.839	0.873
LEVERAGE	H13	+	0.006	0.356	0.551	1.006
CONSTANT			-7.466	9.331	0.002	0.001
Model summary	-2 Log Likelihood ratio = 91.733					
Nagelkerke R^2	0.552					
Hosmer & Lemeshow Test	Chi-Square (8df) = 8.968, *p*-value = 0.345					
Omnibus Tests of Model Coefficients	Chi-Square (13df) = 57.819, *p*-value = 0.000					